UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,570	07/21/2006	Robert W. Morris	30004-004US1	2103

69713   7590   02/17/2010
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EXAMINER
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ART UNIT	PAPER NUMBER
2626	

NOTIFICATION DATE	DELIVERY MODE
02/17/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/565,570	MORRIS, ROBERT W.
	Examiner	Art Unit	
	GREG A. BORSETTI	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 December 2009</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-19* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/8/2009</u>.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____ .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

12/8/2009 has been entered.

Response to Amendment

2.   Claims 1-19 are pending.

3.   Claims 12, 13, 17, and 18 have been amended.

4.   The objection to claim 13 has been withdrawn in view of the amendments

received 12/8/2009.

5.   The 35 USC 112 2nd paragraph rejections have been withdrawn in view of the

amendments received 12/8/2009.

Response to Arguments

6.   Applicant argues Cardillo does not disclose "receiving input from a user

identifying at least two portions of a first set of audio signals as being of interest to the

user." At most, Cardillo teaches receiving an indication that a text-based single- or multi-

word term is of interest to a user." (Remarks, Page 8, ¶ 3)

The Examiner disagrees. A multi-word text query would teach the given limitation. The input is received from a user and identifies at least two portions of a first set of audio signals as being of interest to the user. The broadest reasonable interpretation of the identification of at least two portions can be a multi-word text query. The argument is not persuasive.

7.   Applicant further argues "Further, Cardillo does not disclose "processing... each identified portion of the first set of audio signals to generate a corresponding subword unit representation of the identified portion; [and] forming.., a representation of a spoken event of interest, wherein the forming includes combining the subword unit representations of the respective identified portions of the first set of audio signals." At most, Cardillo teaches forming a representation of a text-based query by probing a phonetic dictionary and/or consulting a spelling-to-sound database. See, e.g., page 12 of Cardillo: "A phonetic dictionary is probed for each word within the query term to accommodate unusual terms (whose pronunciations must be handled specially for the given natural language) as well as very common words (for whom performance optimization is worthwhile). Any word not found in the dictionary is then processed by consulting a spelling-to-sound data base to extract likely phonetic representations given the word's orthography." (Remarks, Pages 8-9)

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ...*combining the subword unit representations*...) are not recited in the previously

rejected claim(s). Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988

F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). However, since the same references are

applied, the Examiner will respond accordingly. Wolf teaches that an input spoken query

is reduced to a phoneme lattice (See Fig 1 and ¶ 0022) Since the phoneme lattice is of

a combination of phonemic interpretations of the utterance, it teaches combining the

subword unit representations of the respective identified portions of the first set of audio

signals. The argument is not persuasive.

8.   Applicant further argues "Even if, for the sake of argument only, Wolf's "spoken

query" is read as corresponding to the recited "spoken event of interest," and even if the

audio signals corresponding to the spoken query that is provided to the speech

recognition engine is read as corresponding to the recited "first set of audio signals," no

portion of Wolf provides any hint or disclosure of "receiving input from a user identifying

at least two portions of a first set of audio signals as being of interest to the user," much

less "processing... each identified portion of the first set of audio signals to generate a

corresponding subword unit representation of the identified portion; [and] forming.., a

representation of a spoken event of interest, wherein the forming includes combining

the subword unit representations of the respective identified portions of the first set of

audio signals," as required in amended claim 1" (Remarks, Page 9, ¶ 3)

        In response to applicant's arguments against the references individually, one

cannot show nonobviousness by attacking references individually where the rejections

are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.

1986). Both Wolf and Cardillo reduce the query (text/speech) to a subword unit

representation. Wolf then goes on to further teach the phoneme lattice as shown in the

above response. The argument is not persuasive.

Information Disclosure Statement

9.   The Information Disclosure Statement (IDS) submitted on 12/8/2009 is not in

compliance with the provisions of 37 CFR 1.97. The Charlesworth reference is

incorrectly numbered as 6873992 when it should be 6873993. However, to correct this,

the Examiner will include it on the 892 to put the reference on record.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

10.   Claim(s) 1 is rejected under 35 USC 101 for being nonstatutory. Under the most

recent interpretation of the Interim Guidelines regarding 35 U.S.C.101, a method claim

must (1) be tied to another statutory class or (2) transform underlying subject matter to a

different state or thing. If no transformation occurs, the claim(s) should positively recite

the other statutory class to which it is tied to qualify as a statutory process under 35

U.S.C. 101. As for guidance to areas of statutory subject matter, see 35 U.S.C. 101

Interim Guidelines (with emphasis of the Clarification of "processes" under 35 USC

101); As an example, the claim(s) could identify the apparatus that accomplishes the

method steps, or positively recite the subject matter that is being transformed. After

further consideration by the Examiner, the system (word spotting system) which was

used to satisfy the machine of the machine or transformation test, can be entirely

software (see ¶ 0059, ...*Alternative systems that implement the techniques described*

above can be implemented in software...)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11.   Claims 1-4, 8-9, 12-19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cardillo et al. (NPL Document Phonetic Searching vs. LVCSR: How

to Find What You Really Want in Audio Archives") in view of Wolf et al. (US PGPUB

#20030204492)

As per claim 1, Cardillo teaches:

       receiving input from a user identifying at least two portions of a first set of audio

signals as being of interest to the user;   (Page 12, column 1, ...*words or*

phrases... a phrase would include at least two portions (words), also the query

representations can be phonetic and would thus also teach phonetic portions.)

processing, by a query recognizer of a word spotting system, each identified

portion of the first set of audio signals to generate a corresponding subword unit

representation of the identified portion;   (Page 12, column 1, ...words or

phrases... a phrase would include at least two portions (words), also the query

representations can be phonetic and would thus also teach phonetic portions. Further,

...*A phonetic dictionary is probed for each word within the query term...*)

accepting, by a word spotting engine of the word spotting system, data

representing the unknown speech in a second audio signal; and   (Fig. 1,

preprocessing phase and generation of the search track. Page 11, column 2, ...*A*

phonetic grammar likewise depends upon the natural language in use (particularly the

set of phonemes used to represent basic sounds and meanings of the input speech).

This grammar is used to identify likely end points of words in the input speech...)

Cardillo fails to fully teach, but Wolf teaches:

forming, by the query recognizer of a word spotting system, a representation of a

spoken event of interest, wherein the forming includes combining the subword unit

representations of the respective identified portions of the first set of audio signals;

(Cardillo, Page 15, column 2, teaches multiple word queries which are two or more

instances of a event of interest. They are performed in a phonetic search therefore they

comprise at least one sequence of phonemes each. Again, Cardillo fails to specifically

teach a spoken event of interest. Wolf, ¶ 0054, ...*a phoneme lattice, as described*

above, can also be used for devices with limited resources…In the case where the

recognizer is part of the input device, e.g., a cell phone, the lattices can be forwarded to

the search engine 190… Furthemore, ¶ 0022, *…If phonemes are used, then it is*

possible to handle words that sound the same but have different meaning… A phoneme

lattice (combination) is used to represent multiple pronunciations of words.)

locating, by the word spotting engine of the word spotting system, putative

instances of the spoken event of interest in the second audio signal using the

representation of the spoken event of interest, wherein the locating includes identifying

time locations of the second audio signal at which the spoken event of interest is likely

to have occurred based on a comparison of the data representing the unknown speech

with the representation of the spoken event of interest.   (Cardillo teaches in

Fig. 1, a searching phase which locates putative instances of a query where ,Page 12,

Temporal_Offset teaches a time location. Cardillo fails to specifically teach a spoken

event of interest (spoken query). Wolf, abstract, *…A spoken query is represented as a*

lattice…)

It would have been obvious to someone of ordinary skill in the art to combine

Wolf with Cardillo to avoid losing information and adding ambiguity by application of a

speech recognition process and performing traditional textual document retrieval. (Wolf,

¶ 0006)

As per claim 2, claim 1 is incorporated and Cardillo teaches:

wherein processing each identified portion of the first set of audio signals

comprises applying a computer- implemented speech recognition algorithm to data

representing the first set of audio signals.   (Page 11, Preprocessing,

Acoustic Model, and Phonetic Grammar, ...*preprocessing engine scans the input*

speech and produces the corresponding phonetic search track...)

As per claim 3, claim 1 is incorporated and Cardillo teaches:

> wherein the subword units include linguistic units.   (Page 11, Preprocessing,

Acoustic Model, and Phonetic Grammar, ...*preprocessing engine scans the input*

speech and produces the corresponding phonetic search track...)

As per claim 4, claim 2 is incorporated and Cardillo fails to fully teach but Wolf teaches:

> wherein locating the putative instances includes applying a computer-

implemented word spotting algorithm configured using the representation of the spoken

event of interest.   (Cardillo teaches phonetic keyword spotting but fails to teach

that the event of interest (query) is spoken. Wolf, ¶ 0054, ...*a phoneme lattice, as*

described above, can also be used for devices with limited resources...In the case

where the recognizer is part of the input device, e.g., a cell phone, the lattices can be

forwarded to the search engine 190...)

> It would have been obvious to someone of ordinary skill in the art to combine

Wolf with Cardillo to avoid losing information and adding ambiguity by application of a

speech recognition process and performing traditional textual document retrieval. (Wolf,

¶ 0006)

As per claim 8, claim 1 is incorporated and Cardillo fails to fully teach but Wolf teaches:

wherein the representation of the spoken event of interest defines a network of subword units.   (Wolf, ¶ 0054, ...*a phoneme lattice, as described above, can also be used for devices with limited resources...In the case where the recognizer is part of the input device, e.g., a cell phone, the lattices can be forwarded to the search engine 190...*)

It would have been obvious to someone of ordinary skill in the art to combine Wolf with Cardillo to avoid losing information and adding ambiguity by application of a speech recognition process and performing traditional textual document retrieval. (Wolf, ¶ 0006)

As per claim 9, claim 8 is incorporated and Cardillo fails to fully teach but Wolf teaches:

wherein the network of subword units is formed by multiple sequences of subword units that correspond to different paths through the network.   (Wolf, ¶ 0054, ...*a phoneme lattice, as described above, can also be used for devices with limited resources...In the case where the recognizer is part of the input device, e.g., a cell phone, the lattices can be forwarded to the search engine 190...*Figs 3a and 3b show the lattices.)

It would have been obvious to someone of ordinary skill in the art to combine Wolf with Cardillo to avoid losing information and adding ambiguity by application of a speech recognition process and performing traditional textual document retrieval. (Wolf, ¶ 0006)

As per claim 12, claim 1 is incorporated and Cardillo fails to fully teach but Wolf

teaches:

accepting first audio data representing utterances of the event of interest spoken

by a user, and processing the first audio data to form a processed query.

(Wolf, ¶ 0054, *…a phoneme lattice, as described above, can also be used for devices*

with limited resources…In the case where the recognizer is part of the input device,

*e.g., a cell phone, the lattices can be forwarded to the search engine 190…*Figs 3a and

3b show the lattices.)

It would have been obvious to someone of ordinary skill in the art to combine

Wolf with Cardillo to avoid losing information and adding ambiguity by application of a

speech recognition process and performing traditional textual document retrieval. (Wolf,

¶ 0006)

As per claim 13, claim 1 is incorporated and Cardillo teaches:

accepting a selection by the user of portions of stored data from the first set of

audio signals, and processing the portions of the stored data to form a processed query.

(Cardillo, Page 14, teaches the use of the AudioLogger™ product for selecting media

segments. Although the capabilities of AudioLogger™ are not discussed in Cardillo,

NPL Document "Inventory of Metadata for Multimedia" teaches in section 3.4 that *…The*

Virage Tools automatically index your video content. The tools use speech recognition

technology to extract information from the audio signal… Therefore, the selection is an

inherent feature of AudioLogger™ of which Cardillo incorporates by reference.)

As per claim 14, claim 13 is incorporated and Cardillo teaches:

prior to accepting the selection by the user, processing the first set of audio

signals according to a first computer-implemented speech recognition algorithm to

produce the stored data.   (Cardillo, Page 14, teaches the use of the

AudioLogger™ product for selecting media segments. Although the capabilities of

AudioLogger™ are not discussed in Cardillo, NPL Document "Inventory of Metadata for

Multimedia" teaches in section 3.4 that ...*The Virage Tools automatically index your*

video content. The tools use speech recognition technology to extract information from

the audio signal. A publishing application makes it possible to publish the searchable

information... Therefore, prior to the selection of the searchable information, a speech

recognition algorithm is performed to produced the stored searchable data. The

selection is an inherent feature of AudioLogger™ of which Cardillo incorporates by

reference.)

As per claim 15, claim 14 is incorporated and Cardillo teaches:

wherein the first speech recognition algorithm produces data related to presence

of the subword units at different times in the first set of audio signals.   (Cardillo

teaches in Fig. 1, a searching phase which locates putative instances of a query where

,Page 12, Temporal_Offset teaches a time location. Thus the collection of subword units

generated by the first speech recognition algorithm is indicative of subword units at

different times in the first set of audio signals.)

As per claim 16, claim 14 is incorporated and Cardillo teaches:

applying a second speech recognition algorithm to the processed query.

(Cardillo, Page 11, column 2, …*It is even conceivable that dynamic channel

and language detection could be employed to switch acoustic models during

preprocessing…* Furthermore, Page 12, column 1, …*A phonetic dictionary is probed for

each word within the query term to accommodate unusual words (whose pronunciations

must be handled specially for the given natural language…* It would have been obvious

to someone of ordinary skill in the art at the time of the invention that if the audio is

indexed in an alternative language and a person wants to search in a different language

(North American English vs. Castilian Spanish), a second speech recognition algorithm

with a phonetic dictionary specific to the language could have been applied to the

processed query.)

Claims 17 and 18 are the computer readable medium and hardware

representations of the method as claimed in claim 1. Claims 17 and 18 are rejected

under the same principles as claim 1 for having similar limitations. Cardillo, Page 20,

table 3 teaches computer implemented means for the method. The computer teaches a

system, and the system cannot operate without being programmed, so a computer

readable medium is inherent.

As per claim 19, claim 18 is incorporated and Cardillo fails to specifically teach, but Wolf

teaches:

wherein the word spotter is further configured to identify time locations of the

second audio signal at which the spoken event of interest is likely to have occurred

based on a comparison of the data representing the unknown speech with the

representation of the spoken event of interest.   (Cardillo teaches in Fig. 1, a

searching phase which locates putative instances of a query where ,Page 12,

Temporal_Offset teaches a time location. Cardillo fails to specifically teach a spoken

event of interest (spoken query). Wolf, abstract, …*A spoken query is represented as a*

lattice…)

It would have been obvious to someone of ordinary skill in the art to combine

Wolf with Cardillo to avoid losing information and adding ambiguity by application of a

speech recognition process and performing traditional textual document retrieval. (Wolf,

¶ 0006)

12.   Claims 5-7, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cardillo et al. (NPL Document Phonetic Searching vs. LVCSR: How to Find What

You Really Want in Audio Archives") in view of Wolf et al. (US PGPUB #20030204492) ,

and further in view of Ferrieux et al. (NPL Document "PHONEME-LEVEL INDEXING

FOR FAST AND VOCABULARY-INDEPENDENT VOICE/VOICE RETRIEVAL")

As per claim 5, claim 4 is incorporated and Cardillo and Wolf fail to teach, but Ferrieux

teaches:

selecting processing parameter values of the speech recognition algorithm for

application to the data representing the first set of audio signals according to

characteristics of the word spotting algorithm.   (Section 2.2, …*To compute the*

optimal parameters of those models,…)

It would have been obvious to someone of ordinary skill in the art at the time of

the invention to combine Ferrieux with Cardillo and Wolf to optimize the parameters of

the system based on the desired outcome (maximize likelihood/minimize error retrieval

rate). (Ferrieux, section2.2)

As per claim 6, claim 5 is incorporated and Cardillo and Wolf fail to teach, but Ferrieux

teaches:

wherein the selecting of the processing parameter values of the speech

recognition algorithm includes optimizing said parameters according to an accuracy of

the word spotting algorithm.   (Section 2.2, …*To compute the optimal*

parameters of those models,…maximize likelihood…)

It would have been obvious to someone of ordinary skill in the art at the time of

the invention to combine Ferrieux with Cardillo and Wolf to optimize the parameters of

the system based on the desired outcome (maximize likelihood/minimize error retrieval

rate). (Ferrieux, section2.2)

As per claim 7, claim 5 is incorporated and Cardillo and Wolf fail to teach, but Ferrieux

teaches:

wherein the selecting of the processing parameter values of the speech

recognition algorithm includes selecting values for parameters including one or more of an insertion factor, a recognition search beam width, a recognition grammar factor, and a number of recognition hypotheses.   (Ferriex, section 2.1 defines the models which include insertion costs, section 2.2 optimizes them.)

It would have been obvious to someone of ordinary skill in the art at the time of the invention to combine Ferrieux with Cardillo and Wolf to optimize the parameters of the system based on the desired outcome (maximize likelihood/minimize error retrieval rate). (Ferrieux, section2.2)

As per claim 10, claim 1 is incorporated and Cardillo and Wolf fail to teach, but Ferrieux suggests:

wherein forming the representation of the spoken event of interest includes determining an n-best list of recognition results.   (Section 3, Synchronized Lattices, …*for each phoneme of the 1-best sequence, the posterior probabilities of the N-1 other phonemes on the same interval are also given…* Ferrieux further provides …*the single best sequence of phonemes often contains errors, and although systematic errors are handled by the confusion matrix, it is felt that knowledge of the second-best match would most often yield greater precision…* Therefore, given that the single best sequence of phonemes often contains errors, it would have been obvious to someone of ordinary skill in the art that multiple sequences through the lattice would have been beneficial to boost precision due to a higher number of sequences.)

It would have been obvious to someone of ordinary skill in the art at the time of

the invention to combine Ferrieux with Cardillo and Wolf to optimize the parameters of

the system based on the desired outcome (maximize likelihood/minimize error retrieval

rate). (Ferrieux, section2.2)

As per claim 11, claim 10 is incorporated and Cardillo and Wolf fail to teach, but

Ferrieux suggests:

   wherein each sequence of subword units in the representation corresponds to a

different one in the n-best list of recognition results.   (Section 3, Synchronized

Lattices, ...*for each phoneme of the 1-best sequence, the posterior probabilities of the

N-1 other phonemes on the same interval are also given...* Ferrieux further provides

...*the single best sequence of phonemes often contains errors, and although systematic

errors are handled by the confusion matrix, it is felt that knowledge of the second-best

match would most often yield greater precision...* Therefore, given that the single best

sequence of phonemes often contains errors, it would have been obvious to someone

of ordinary skill in the art that multiple sequences through the lattice would have been

beneficial to boost precision due to a higher number of sequences. The phoneme

sequences are the matches (which defines the first and second options) in Ferrieux,

therefore it would have further been obvious that the phoneme sequences through the

lattice would have been each of the different options in the n-best criterion evaluations.)

   It would have been obvious to someone of ordinary skill in the art at the time of

the invention to combine Ferrieux with Cardillo and Wolf to optimize the parameters of

the system based on the desired outcome (maximize likelihood/minimize error retrieval

rate). (Ferrieux, section2.2)

Conclusion

13.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Refer to PTO-892, Notice of References Cited for a listing of analogous art.

14.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREG A. BORSETTI whose telephone number is (571)270-3885, (FAX: 571-270-4885). The examiner can normally be reached on Monday - Thursday (8am - 5pm Eastern Time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHEMOND DORVIL can be reached on 571-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Greg A. Borsetti/
Examiner, Art Unit 2626

/Talivaldis Ivars Smits/
Primary Examiner, Art Unit 2626   2/2/2010